Before You Worship The Sun

Today, many researchers and dermatologists believe that wrinkling and aging changes of the skin are much more related to sun damage than to age! Many of the signs of skin damage from the sun are pictured on these pages. The decrease in the ozone layer, increasing the sun’s intensity, and the increasing sun exposure among our population – through work, sports, sunbathing and tanning parlors – have taken a tremendous toll on our skin. Sun damage to the skin ranks with other serious health dangers of smoking, alcohol, and increased cholesterol, and is being seen in younger and younger people.

Who’s At Risk?

Skin types that burn easily and tan rarely are much more susceptible to the ravages of the sun on the skin than are those that tan easily, rather than burn. Light complected, blue-eyed, red-haired people such as Swedish, Irish, and English, are usually more susceptible to photo damage, and their skin shows the signs of photo damage earlier in life and in a more pronounced manner. Dark complexions give more protection from light and the sun.

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SUN DAMAGE DURING LIFE

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<tr>
<th>Younger</th>
<th>Older</th>
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<tbody>
<tr>
<td>Sunburn Suntan</td>
<td>Carcinoma (Cancer)</td>
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<tr>
<td>Roughness</td>
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<td>Mottled</td>
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<td>Hyperpigmentation</td>
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<td>Fine Wrinkling</td>
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<td>Deep Wrinkling</td>
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<td>(Lentigines</td>
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<td>Telangiectasia)</td>
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<td>Pre Cancer</td>
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<tr>
<td>- Actinic Keratosis</td>
<td>(Sun Spots)</td>
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Increased pigment and blotchy discoloration secondary to sun damage.
Over 1 million skin cancers are found every year in America and they are the most common form of cancer. Detected early, they are almost always curable.

**Actinic Keratoses**

Precancerous sun spots frequently seen with sun damage on “midwestern skin.”

**Solar Lentigo/Sun Spots**

Solar lentigo consists of brown spots, resembling freckles and cell damage on sun exposed areas of the skin. These are frequently caused by sun damage and can be treated with glycolic face treatments, microdermabrasion, chemical peels, or laser resurfacing.

**Lentigo Maligna**

Beginning as a small brown pigmented spot that slowly extends and darkens in an irregular fashion. These are early melanomas, in the upper layer of skin.
3) Melanoma Cancer

More than 50,000 melanomas are discovered each year, which means about 1 in 74 Americans have a lifetime risk of developing melanoma. They make up 4% of all skin cancers and if the current rate holds steady, this year one person will die each hour of melanoma. A history of sunburn is significantly associated with individuals with melanomas.

It is the most serious form of skin cancer and can be found in sun exposed areas of skin and in non-sun-exposed areas where moles have changed. Melanomas are most commonly found on men’s trunks, and women’s lower legs.

The most effective treatment for melanoma is early surgical removal, which follows early detection. Our yearly free skin cancer screenings have detected many malignant melanomas, as well as all forms of skin cancer, on the citizens of central Illinois over the last two decades.

2) Squamous Cell Cancer

Squamous cell carcinomas occur at the rate of 208,000 per year and can sometimes (albeit infrequently) spread to the lymph nodes. They make up 16% of skin cancers. Squamous cell cancers frequently develop in the sun damaged areas of the skin that have already formed precancerous actinic keratoses. Treatment of these cancers, premalignant areas, and the skin that generates these malignant conditions is advisable.

1) Basal Cell Carcinoma

Basal cell carcinomas are the most common form, and as we might expect, most frequently occur on sun exposed areas, particularly the nose, forehead and cheeks. They account for 80% of all skin cancers with over 140,000 new cases per year.
MOHS MICROGRAPHIC SURGERY

Mohs surgery is a highly specialized treatment for the total removal of skin cancer. This method differs from all other methods of treating skin cancer by the use of complete microscopic examination of all the tissues removed surgically, as well as detailed mapping techniques to allow the surgeon to remove all the roots and extensions of the skin cancer.

The procedure, performed here at Soderstrom Skin Institute by a Mohs micrographic surgeon, is begun after the skin is injected with a local anesthetic to make it completely numb. Then the visible cancer and a very thin layer of skin are removed with a scalpel, carefully mapped, and examined microscopically. If cancer is still present under the microscope, another very thick layer of skin is removed from that exact location. This may be repeated to completely remove the cancer, and these are are called stages.

Advantages in Mohs Surgery

By using the detailed mapping techniques and complete microscopic control, the Mohs surgeon can pinpoint areas involved with cancer that are otherwise invisible to the naked eye. Therefore, even the smallest microscopic root of cancer can be removed. The result is: 1) the removal of as little normal skin as possible, and 2) the highest potential of curing the cancer.

Cure Rate

Mohs surgery is the most accurate method for removing skin cancers. In previously treated cancers, where other forms of treatment offer only 80%-90% chance of success, Mohs surgery is 95% effective.

Peoria Ambulatory Surgery Center

Mohs surgery is performed in our pleasant outpatient surgery center - Peoria Ambulatory Surgery Center. There are many advantages to this same day surgery center but the key points include cost effectiveness and privacy. The staff at Peoria Ambulatory Surgery Center strive to make every surgical experience thorough, effective, efficient, and pleasant. They are completely Medicare approved and accredited by the Accreditation Association for Ambulatory Health Care, Inc.

TIPS............ FOR PROTECTING OURSELVES FROM SUN’S DAMAGING RAYS INCLUDE:

1. Avoiding the hot sun from 10:00am to 4:00pm.
2. Wearing a wide-brimmed hat.
3. Wearing long-sleeved light weight shirts and blouses.
4. Wearing sunscreens all year long.
5. Avoiding reflective surfaces such as water and snow.
7. Avoiding tanning parlors.

Disclaimer

Any form of treatment will leave a scar. However, because Mohs surgery removes as little normal tissue as possible, scarring is minimized. Immediately after the cancer is removed, we may choose 1) to allow the wound to heal by itself, 2) to repair the wound with stitches, or a skin graft or flap, or 3) to send the patient to the referring physician or another surgeon for wound repair. The decision is based on the safest method that will provide the best cosmetic results.
**Mild & Severe Rhytides/Wrinkles**

Mild and severe wrinkling of the upper layer of the dermis caused by sun damage.

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**SUN DAMAGE AVOIDANCE & PROTECTION SAVES LIVES**

**Sun in Moderation**

Treatment for all of the different ramifications of sun damage includes a stepwise approach, designed in a thoughtful manner specifically for each individual patient. First, and most obviously, it is important to avoid further exposure to the sun and UV A and UVB rays. This can be done by following the prevention guidelines below:

**Sun Avoidance and Protection Saves Lives!**

The sun emits two types of rays that cause damage to the skin, ultraviolet A (UVA) and ultraviolet B (UVB). UVB rays are commonly called burning rays, affecting the top layer of skin, causing pain, redness, and swelling. UVA rays penetrate deeper to the second layer of skin and are often called “tanning rays.” These UVA rays stimulate the production of pigment to protect the skin from the damaging effects of the radiation. Therefore, there is no such thing as a “healthy” tan. In addition, UVA rays cause permanent damage to the underlying support structure of the skin which results in premature wrinkling and aging effects. Over time, the radiation can cause changes at the cellular level which can result in the development of skin cancers and other nonmalignant skin lesions. Even though a tan disappears in the winter, the sun damage does not. It is permanent and cumulative. In other words, damage continues to add up year after year after year.

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The prevention of damage to the skin from exposure to the sun’s ultraviolet (UV) rays consists largely of protection. There are several ways to protect the skin from this damage.

1. **AVOIDANCE:** Avoid activities in the sun from 10:00am to 4:00pm. These are the hours of the day when the sun’s rays are the most direct and potentially the most damaging to the skin.

2. **CLOTHING:** Protect exposed areas with wide brimmed hats and lightweight, long-sleeved shirts and blouses. A loose fitting tightly woven fabric is best because the loose fit allows for a cooling effect while the tight weave prevents penetration of the sun’s rays. Light colored fabrics reflect the sun away from the body. Gloves may be appropriate for outdoor work.

3. **LOCATION:** Remember that reflective surfaces, such as water, and even snow, intensify the sun’s damaging effects. The Earth’s atmosphere filters UV rays, as smog, dirt, and pollution. Sun damage will occur more readily on a beach by the water than on a city rooftop. Sitting in the shade offers protection from less than half of the sun’s rays. High altitudes allow a concentrated dose of UV radiation, even in the winter. Remember, it is the sun’s rays, not the temperature that is dangerous.
4. MEDICATIONS: Photosensitivity, an adverse reaction to sunlight, characterized by rash, redness and/or swelling, can be a side effect of certain medications.

5. DISEASES: Some diseases can be either initiated or made worse by UVB and UVA exposure. These include polymorphous light eruption (PMLE), chronic actinic dermatitis, actinic reticuloid, lupus erythematosus, and solar urticaria (hives).

6. SUNSCREENS: Sunscreens are a vital protection for everyone, even people who tan easily. These products are as necessary on the ski slope as they are on a tropical beach. Sunscreens are rated by a standardized Sun Protection Factor (SPF) based on the ability of the product to prevent sun damage. Any sunscreen requires reapplication when perspiring, after swimming, or when the effectiveness has “worn off.” There are waterproof sunscreens available, but the directions listed on the label should be carefully followed. Remember to apply sunscreens to extra susceptible areas like the ears, lips, and nose. Be cautious even on cloudy, hazy days, as 70% to 80% of the sun’s damaging rays can penetrate cloud cover or water.

7. TANNING BOothS AND PARLORS: Tanning parlors claim to offer all the good looks of a tan with none of the risks. This simply is not true. Both outdoor and indoor sources of UV light produce detrimental changes in the skin. In fact, the bulbs used in tanning beds emit two to three times the amount of UVA rays that are normally received from the sun. It has been shown that an individual who spends 30 minutes in a tanning bed is receiving the amount of sun damage equivalent to spending an entire day laying out in the sun at the beach.

Since tanning represents the body’s response to injury, chronic exposure to ultraviolet rays, whether it be from the sun or tanning units, causes the skin to become coarse, wrinkled, and leathery in appearance.

The UV light of a tanning booth also increases the risk of skin cancer. Understanding the consequences of exposure to both indoor and outdoor sources of radiation is a first step in the process of changing tanning practices, thereby reducing the risk of developing skin cancers.

The Skin Cancer Foundation has declared that it is “...abundantly clear that these devices lead to an increase in visible damage to the skin and skin cancer.” (“Dark Duplicity: False Claims for Sunlamps Start Again”, Sun & Skin News, A Publication of the Skin Cancer Foundation)

8. SELF TANNING LOTIONS: If it’s a nice golden tan you are after you may want to consider some of the self-tanning lotions that are available on the market today. These products contain an active ingredient known as dihydroxyacetone (DHA), a colorless sugar that darkens the skin by staining. DHA works by interacting with the dead surface cells found in the epidermis, or the outermost layer of the skin, producing a color change. As the dead skin cells are naturally sloughed off, the color gradually fades - typically within five to seven days of a single application. Skin Dimensions Day Spa offers self tanning lotion as well as a spray tanning technique.
Sunscreens:

Remember, the lips are also exposed to damage from the sun’s rays. Look for lip protection that contains sunscreen with an SPF15 or better such as Vanicream™ Lip Protectant SPF30, available at Soderstrom Skin Institute.

What is an SPF?

SPF stands for Sun Protection Factor and is a standardized measurement of the ability of a product to prevent sun damage by absorbing radiation. During the initial testing of these products it was determined that, on the average, it takes ten minutes of sun exposure to produce a sunburn. Ideally, the SPF number tells how many times more than ten minutes an individual can stay in the sun before a burn will occur. Therefore, a product with an SPF of 8 would protect the wearer from a sunburn for eighty minutes, a factor of 15 would offer a little over two hours protection and so on. Keep in mind that ten minutes is only an average. Everyone’s tolerance to sunlight will be somewhat different. Environmental conditions such as being in and out of water, to perspiration will decrease the amount of protection offered regardless of the SPF. For maximum protection, the best rule is to reapply any sunscreen approximately every two hours.

Further study into the effects of ultraviolet radiation on the skin demonstrated the damaging effects of UVA radiation. This has lead to a new generation of broad spectrum sunscreens that protect the skin from other UVB and UVA radiation. It is important to check the product label to determine not only how much protection the sunscreen provides (SPF), but also what kind of protection (against UVB rays or both UVB and UVA rays). There are many sunscreens available on the market today. See picture above for a variety of products available at Soderstrom Skin Institute.

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<tr>
<th>SPF</th>
<th>%UVB Absorption*</th>
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<tr>
<td>8</td>
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<tr>
<td>10</td>
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<tr>
<td>39</td>
<td>97.4%</td>
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Awareness Of Medications Reacting To Sun

There are certain medications that can make our skin more sensitive to the sun. These may increase sun damage and should be avoided if you do not wear a sunscreen or if you are going to be outdoors a lot.


*Reactions occur frequently.

Note: No sunscreen can guarantee protection from a photosensitivity reaction when using any of these drugs.
Cryosurgery

Cryosurgery using liquid nitrogen is a very effective method to treat and remove the precancerous sun spots such as actinic keratoses. This chemical, at 207 degrees below zero, peels off the damaged layer of skin only in the spots where liquid nitrogen is applied, and new skin develops in those areas.

5-Fluorouracil

5-Fluorouracil is an anticancer drug that is used in a cream form. This medication seeks out cancerous or precancerous cells, irritates them on the skin and causes them to peel off. This is a very effective form of mild to limited peeling of the skin, oftentimes leaving new and rejuvenated skin in the area of the peeling.

Photodynamic Therapy

The newest form of treatment is photodynamic therapy using a topical chemical and blue light. The chemical aminolevulinic acid hydrochloride (ALA) is applied topically to areas to be treated and left in place for 24 hours. Chemical reactions with the skin produce the photosensitizing chemical protoporphyrin IX. When protoporphyrin IX is exposed to blue light by a special illuminating device it causes death of AK cells. Retreatment may be necessary if new AKs appear months to years later.

Chemical Peels

A Chemical Peel is a noninvasive technique for restoring wrinkled, blemished, unevenly pigmented, or sun damaged facial skin, using a chemical solution to peel away the skin’s top layers. The new cells that form during the healing process produce a smoother, tighter, younger looking skin surface.

There are three types of Chemical Peels used at Soderstrom Skin Institute and Skin Dimensions Day Spa.

Glycolic: Alpha-Hydroxy Acids

AHA’s are a group of nontoxic, organic substances found naturally in many common fruits and foods. Acid from apples, tartic acid from grapes, citric acid from citrus fruits, and lactic acid from sour milk are all examples of AHA’s. Glycolic acid, the simplest of all the hydroxy acids, has the greatest penetration potential due to its small molecular size. As a result, glycolic acid is said to provide the greatest benefits for skin care in comparison to other commonly used AHA’s. The estheticians at Skin Dimensions Day Spa and the dermatology nursing staff perform glycolic peels that come in three different strengths ranging from 40%-99%. The glycolic peel smooths and hydrates roughened, sun damaged skin, helps diminish acne and acne scarring, cleanses facial pores and helps reduce fine lines and wrinkles. Glycolic face treatments are available at Skin Dimensions Day Spa. Call (309) 691-9381 for an appointment.
TCA Peels

Trichloroacetic acid has been used to perform skin peels for over 30 years. Unlike some other types of peels, TCA peels have the additional advantage of creating a fresh natural appearing complexion, while preserving the normal skin color. TCA peels can effectively improve many conditions, including:

- Dull, weathered skin
- Freckling
- Blotchy pigmentation (including the mask of pregnancy)
- Sun Damage (including some precancerous lesion)
- Fine wrinkles
- Shallow acne scars

TCA peels are performed by our physicians. A solution containing TCA is applied to your skin. This is usually associated with 2-3 minutes of a burning and stinging sensation. This burning is so brief that most patients choose not to use any sedation or anesthesia.

When TCA is applied to the skin, it causes the top layers of cells to dry up and peel off over a period of several days. When the old skin has peeled off, it exposes a new layer of undamaged skin, which has a smoother texture and more even color.

TCA peels can be performed on most skin types but not everyone is a candidate as with any procedure. Unlike AHA peels, excellent results can usually be obtained with one peel; although a second TCA peel may be necessary for some skin problems.

Phenol Acid Peels

Phenol is the strongest of the chemical solutions and produces a deep peel. It is used mainly to treat patients with coarse facial wrinkles, areas of blotchy or damaged skin caused by sun exposure, or precancerous growths. Phenol peels are performed in our Peoria Ambulatory Surgery Center by one of our board certified Plastic Surgeons.

All treatments require an initial consultation. For an appointment, please call (888) 970-SKIN or visit our website at SoderstromSkinInstitute.com.
Retinol (Retin-A)

Retin-A, or tretinoin, is a drug that was first discovered because of its help in treating blackhead acne. It causes many changes in the skin, however, several of which have to do with the partial reversal of sun damaged areas. It comes in several strengths, and is applied once or more daily until results are obtained. Many of the photoaging changes, including wrinkling, pigment spots and precancers, can be lessened with the use of Retin-A.

Microdermabrasion

Microdermabrasion is a process that utilizes miniscule grains of aluminum oxide crystals to gently exfoliate the skin while restoring smoothness and softness. With microdermabrasion, the outer layer of the skin is thinned gradually during five to eight sessions conducted at intervals of seven to ten days. The whole process takes just minutes!

Call (888) 970-SKIN for an appointment.

Laser Beam

Laser therapy has become a very exciting technology advancement for dermatology as it is extremely effective in reversing the wrinkles and age spots resulting from sun damage. Treatment involves using the Ultrapulse CO2 and/or the Erbium Laser which transmits pulse of colorless, infrared light into one layer of skin at a time. This allows the surgeon to tighten and resurface the skin one layer at a time.
SODERSTROM SKIN INSTITUTE LOCATIONS

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TO VIEW ADDITIONAL LOCATION INFORMATION, VISIT SODERSTROMSKININSTITUTE.COM/LOCATIONS